IN THE SPECIFICATION:

Please amend the specification as follows, by replacing the following paragraphs:

Please replace the paragraph starting on page 2, line 2 with the following:

Display arrays utilize a collection of elements which are controlled in concert with one another for displaying text or graphics. A scrolling LED advertising panel is typical of such a display array. These displays are increasingly utilized both outdoor and indoor for conveying information and advertising. The display elements within these arrays are typically LEDs which are usually provided as single color, dual color, or [[RGB]] multicolor, such as red/green/blue (RGB). Large displays may encompass tens of thousands of elements for a large area display or marquee. The use of incandescent bulbs in signs is also prevalent within certain ~~certains~~ forms of signage, however, as the cost of LEDS decreases and the available intensity increases, fewer signs are utilizing incandescent lighting elements. Although display arrays have become increasingly important, their basic designs [[have]] has not significantly changed since the 1970s.

Please replace the paragraph starting on page 2, line 13 with the following:

In order to appreciate the beneficial aspects of the present invention, it is necessary to generally understand the design and construction of display arrays as they are currently being designed and produced. Elements of a display array are generally arranged in rectangular arrays with rows and columns. In systems with only a few discrete display elements, each element may be individually turned on and off by a

controller in a direct (non-multiplexed) operation. However, display multiplexing, as generally shown in FIG. 1, was introduced to overcome the difficulty with providing individual signals for each element of a large array. Basically, in a multiplexed display each display element is connected across a row and a column, such that any element may be enabled, or lit up, by providing power on a column while pulling one of the rows to ground. By quickly scanning across the rows and columns each element can be individually driven for a small duty cycle. Multiplexing reduces the number of control lines necessary but results in a commensurate loss of maximum output intensity. It will be appreciated that each [[dispplay]] display element may only be driven for a small percentage of the time, depending on the depth of multiplexing utilized, and the achievable display intensity is therefore reduced. In the array of FIG. 1 it will be appreciated that power to one column may be applied wherein current sinking by the row driver activates any LEDs in that column, wherein each LED can be activated for a maximum of 1/6 of the total time as there are a total of six columns which are being driven. In displays requiring greater intensity, such as outdoor displays, the depth of multiplexing must be reduced and many displays utilize drivers for each display element.

Please replace the paragraph starting on page 14, line 1 with the following:

An integrated circuit form of the described circuitry would preferably contain configuration options and test ~~testing~~ connections. For example, the ~~chip~~ universal scanning circuit may be bonded to LEDs as display elements or as a programming LED. In addition access should be provided to critical circuit areas for chip testing.

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B3 cont

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function, however, using a row clock allows the USLED circuit to be designed to support a very large row length even if just a portion of that row is populated with display elements. An objective of the invention that should continually determine the preferable arrangement for the circuit is that of creating a substantially universal circuit which may be used within the display elements of any display array.

Please replace the paragraph starting on page 23, line 19 with the following:

FIG. 4 contains another embodiment 70 of an RGB USLED whose non-volatile memory does not require a high voltage programming level to initiate programming of the device. To control the programming of the element, a non-volatile memory cell was added 94, which is initially in an unprogrammed "1" state. An S/R flip-flop 96 is connected so as to power up in a reset state. When the counters are unprogrammed their non-volatile state is set to all ones which corresponds to the last address possible for the APA control signal (an address not populated by a display element). To prevent the USLED from getting accidentally programmed, a preprogramming step is provided wherein the ~~cycle is~~ APA cycle is extended up to the highest address wherein all unprogrammed USLEDs are selected (with data = 0). This selection is performed once the system is ready for programming and established in optical connection with the programming display wherein no extraneous light can inadvertently trigger loading. The selection activates the set line of S/R flip-flop 96 to preselect the device for programming. At this point each USLED device will be programmed upon encountering a light pulse. As sufficient light is received, comparator 92 generates a program signal. Since the non-volatile memory is set to all "1s", the cell 94 is outputting a 1 which

indicates unprogrammed. Combined with the output of the S/R FF, the programming signal is gated through to load all the non-volatile memory (counters and the separate cells). Once programmed, cell 94 is set to "0" such that the USLED can not be reprogrammed.